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Floodplain Assessment for the Installation of Permanent Power to the TA-36 Remote Restroom

Los Alamos National Laboratory

Los Alamos
NATIONAL LABORATORY

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ACRONYMS AND ABBREVIATIONS

Acronym	Definition
CFR	Code of Federal Regulations
DOE	(U.S.) Department of Energy
EO	Executive Order
EPA	(U.S.) Environmental Protection Agency
IRT	Integrated Review Tool
LANL	Los Alamos National Laboratory
NMED	New Mexico Environment Department
NNSA	National Nuclear Security Administration
PVC	polyvinyl chloride
RCRA	Resource Conservation and Recovery Act
SWMU	solid waste management unit
TA	technical area

INTRODUCTION

The National Nuclear Security Administration (NNSA), a semi-autonomous agency within the U.S. Department of Energy (DOE), is proposing new construction at Los Alamos National Laboratory (LANL) at Technical Area 36 (TA-36; Figure 1). This floodplain assessment has been prepared in accordance with DOE regulations set forth in Title 10 Code of Federal Regulations (CFR), Part 1022, Compliance with Floodplain and Wetland Environmental Review Requirements (CFR 2003). The proposed project would provide permanent electrical power to a vault-type restroom. Project activities within the 100-year floodplain would include installation of underground conduit for electrical wiring.

The 10 CFR 1022 was promulgated to implement Federal agency (e.g., DOE) requirements under Executive Order 11988, Floodplain Management (EO 1977). A floodplain is defined in 10 CFR 1022 as "the lowlands adjoining inland and coastal waters and relatively flat areas and flood prone areas of offshore islands," and a base floodplain as "the 100-year floodplain, that is, a floodplain with a 1.0 percent chance of flooding in any given year" (CFR 2003). This floodplain assessment evaluates potential impacts to floodplain values and functions from implementation of the proposed action, identifies alternatives to the proposed action, and allows for meaningful public comment.

DOE/NNSA published this floodplain assessment for a 15-day public review and comment period. Please provide comments on this floodplain assessment to Karen Armijo at

Email: karen.armijo@nnsa.doe.gov

Or

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After the close of the public comment period and before issuing a floodplain statement of findings, DOE/NNSA will reevaluate the practicability of alternatives to the proposed floodplain action and the mitigating measures, taking into account all substantive comments received during the public comment period. After issuing a floodplain statement of findings, DOE/NNSA shall endeavor to allow at least 15 calendar days of public review before implementing a proposed floodplain action.

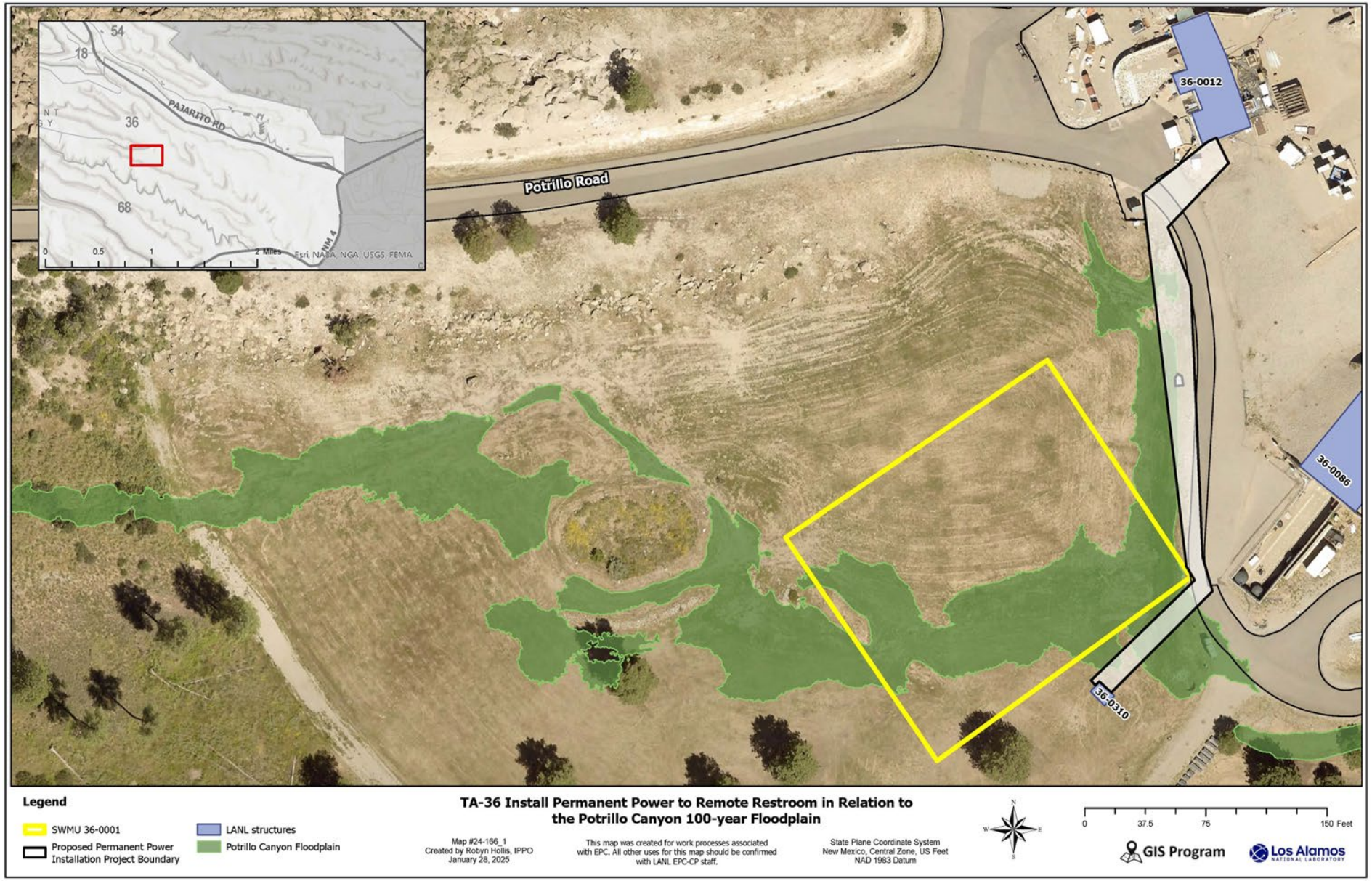

Figure 1. Location of proposed permanent power installation in relation to Potrillo Canyon 100-year floodplain.

BACKGROUND

LANL operates remote firing sites that have limited sanitation infrastructure. For years, some sites used only portable toilets (porta-potties) to serve personnel who operate the firing sites. Recent windstorms resulted in instances of the portable toilets blowing over, causing unplanned releases. LANL recently installed vault-type restroom units—heated restrooms with handwashing stations—to meet the sanitation needs of site staff.

This project proposes to provide continuous power to the vault-type restroom unit by bringing electric lines from Building 36-0012 to Building 36-0310 (Figure 1). The availability of permanent power would prevent water in the pipes and vault from freezing in winter and provide heated water for washing year-round.

The segment of the Potrillo Canyon 100-year floodplain, which is also the base flood elevation, runs roughly northwest to southeast in the proposed project location (Figure 1). The canyon bottom is a mixture of developed and undeveloped areas. The proposed project location associated with the floodplain is previously disturbed with paved roads, culverts, road shoulder rights-of-way, and structures. LANL maintains vegetation in this area for specific fuels mitigation related to high-explosives facilities (LANL 2023, DOE 2019).

PROJECT DESCRIPTION

The project proposes to install a permanent, underground electrical power line in conduit from Building 36-0012 to Building 36-0310. Figure 1 shows the proposed project locations within the Potrillo Canyon floodplain. This assessment focuses on proposed activities and impacts occurring in or near the Potrillo Canyon 100-year floodplain.

To install the proposed underground electrical power line, construction personnel would dig a trench approximately 350 feet in length and approximately 2-foot-wide by 3-foot-deep from Building 36-0012 to Building 36-0310 (Figure 2 and Figure 3) with the use of hand tools and a vacuum potholing truck with rubber tires. Personnel would place conduit of a material approved for underground use, such as polyvinyl chloride (PVC) or high-density polyethylene, into the trench and then backfill the trench. The project proposes to keep all excavated soil at the project site and use it to backfill the trench. The project would stabilize all areas of disturbed soil and vegetation to minimize erosion following guidelines in the LANL Seeding Specification (LANL 2021).

The project would install two ground bars at the south end of the trench, next to Building 36-0310, driving them directly into the soil to a depth of approximately 10 feet. Electrical wire would be fed through the conduit and the appropriate connection made at both ends. These two activities are outside the 100-year floodplain and are not expected to cause impacts to the floodplain.

Figure 2. Proposed power line installation location along asphalt road looking south.

Figure 3. Proposed power line installation location looking southwest.

FLOODPLAIN IMPACTS

The proposed project footprint is approximately 0.14 acres (6,224 square feet). The maximum total short-term disturbance in the Potrillo Canyon 100-year floodplain is approximately 0.032 acres (1,414 ft^2). The area described includes necessary space for trenching, an area for materials staging to one side of the trench, and an area around the trench in which to conduct work activities safely. No aboveground structures or impervious surfaces are proposed in the floodplain; therefore, no long-term disturbance is expected.

The excavated trench would be a maximum of 3 feet below ground surface and approximately 2 feet wide. After conduit placement, excavated soil would be backfilled into the trench and compacted. The project would stabilize any excess soil at the excavation site following guidelines in the LANL Seeding Specification (LANL 2021) or dispose of excess soil in accordance with LANL Procedure (P) 409, *LANL Waste Management* (LANL 2022). The project would also stabilize any additional disturbance caused by equipment traffic.

LANL subject matter experts use a LANL maintained project review tool to identify, evaluate, and resolve project-specific issues, such as the presence of underground utilities, contaminated soils, spills and leaks, soil disturbance and stabilization, threatened and endangered species habitat, floodplains or wetlands; and to ensure regulatory agency authorizations, such as US Army Corp of Engineers permit requirements and Clean Water Act permit requirements. The tool aids in identifying potential impacts to the natural and built environment from the proposed project.

Short-Term Impacts

Subject matter experts identified and reviewed the following requirements to avoid potential impacts:

- The project does not propose work in any wetlands within LANL property; no wetlands impacts are expected.
- The total proposed area of project disturbance is not 1 acre or larger; therefore, National Pollution Discharge Elimination System Construction General Permit coverage is not required. However, the project is required to use appropriate best management practices to contain excavated materials and all other potential pollutants within worksite limits and away from potential stormwater flow. Controls may include temporary measures to reduce sediment transport during construction, pollution prevention measures such as housekeeping and spill prevention, and final stabilization to control erosion after completion of construction activities. The project would complete any required vegetation stabilization in accordance with the LANL Seeding Specification (LANL 2021).
- The project would not be subject to any additional requirements regarding the Energy Independence and Security Act, Section 438. No additional impervious surfaces or modification to stormwater flow paths are proposed.
- In accordance with U.S. Army Corps of Engineers regulations, a Clean Water Act Section 404 dredge and fill permit or New Mexico State Section 401 Water Quality Certification would not be required for this project (Federal Register 2023) if the project adheres to the following conditions:
  - Project activities must not temporarily stage vegetation, soils, or equipment within the watercourse

  - Activities must not push soils into the watercourse
  - Vegetation that has been removed or masticated must not be left in the watercourse
  - Heavy equipment must not be used within the stream channel, especially if conditions are too wet to prevent damage to the soil structure
- Based on LANL surveys and procedures, no historical or archaeological resources are located within 100 feet of the proposed project areas. No impacts are expected to occur to cultural resources; however, the project must follow the LANL procedure for inadvertent discoveries (LANL 2019).
- Based on LANL surveys and procedures, no threatened or endangered species habitat is located near the proposed project area. No impacts are expected to occur to threatened or endangered species.
- The proposed project is adjacent to Solid Waste Management Unit[1] (SWMU) 36-001, Material Disposal Area AA (legacy landfill) located approximately 100 feet southwest of Building 36-0086. Soil or vegetation must not be disturbed or removed from the SWMU as a result of construction activities. If the project cannot avoid disturbance to SWMU 36-001, the project must pause work and contact the LANL Consent Order subject matter experts.

The project does not expect to remove soil or vegetation from the project area as a result of construction activities. Rather, the project proposes to keep all disturbed soil and vegetation on site, return it to its point of origin, and stabilize it in place (LANL 2021). The project is required to take precautions to avoid inadvertent transport of potentially contaminated soil from the site. If any soil is removed from the site, it must be managed, characterized, and disposed of in accordance with the P409, *LANL Waste Management* (LANL 2022).

The project would avoid or minimize additional potential short-term direct and indirect floodplain impacts from release of pollutants to the floodplain and exposure to stormwater through implementation of the following best management practices:

- Hazardous materials, chemicals, fuels, and oils would not be stored within the floodplain.
- Heavy equipment would not be used within the stream channel, especially if conditions are too wet to prevent damage to the soil structure.
- Equipment would be refueled at least 100 feet from the Potrillo Canyon floodplain.

Potential direct effects to migratory birds and other biological resources are minimal because little or no habitat would be disturbed. The Migratory Bird Treaty Act prohibits killing migratory birds, including nestlings and eggs in an active nest. Therefore, if the project requires vegetation removal during the nesting season (May 15 through July 15), LANL Biological Resources subject matter experts would conduct an onsite inspection for bird nests. Construction activities would conform to requirements

[1] A SWMU is any discernible unit at which solid waste has been placed at any time and from which the New Mexico Environment Department (NMED) determines there may be a risk of a release of hazardous waste or hazardous waste constituents, irrespective of whether the unit was intended for the management of solid or hazardous waste.

stipulated in the Migratory Bird Best Management Practices Source Document for Los Alamos National Laboratory (LANL 2020).

Long-Term Impacts

No long-term impacts to the floodplain are anticipated as a result of this project. The project would install the proposed conduit underground, return the disturbed areas to original grade, and stabilize any disturbed soil. Project personnel may perform periodic maintenance checks of the conduit and electrical wires using methods that do not disturb the soil. A PVC type conduit would not need to be replaced for 50 to 80 years. Flow paths within the floodplain would have little to no modification from pre-project conditions to post-project conditions. After high-flow events, the area within the floodplain would be monitored for erosion and debris entrapped in the downstream culvert, and maintenance options assessed and scheduled.

This assessment also considers the impacts of the proposed actions in the floodplain on habitat conservation for existing flora and fauna, aesthetic values, and public interest. The proposed action would not impact cultural resources because none are expected to be discovered in the project area. The proposed action is not expected to remove any protected species habitat. The proposed action is not considered to negatively impact aesthetic values or public interest because the proposed project would occur in areas that are internal to LANL.

ALTERNATIVES

The alternatives available to DOE/NNSA include the no-action alternative. This alternative was not selected because of the need to provide continuous electrical power to the vault-type restroom to prevent water from freezing in the pipes and vault, which could cause damage to the structure.

The alternatives of providing continuous electrical power through an overhead power line or solar panels were not selected because of the potential for explosives fragments to damage electrical equipment and start a fire.

The alternative of trenching through the access road pavement was not selected because this construction would prevent heavy equipment from using the road for the duration of the proposed project, causing delays to programmatic work.

CONCLUSIONS

As described in this assessment, the proposed project would improve overall sanitation for personnel who staff the TA-36 remote firing site. Installing electrical power to the vault-type restroom unit would prevent water in the pipes and vault from freezing in winter and provide heated water for washing year-round.

The proposed project would result in limited and minor direct and indirect impacts to the 100-year floodplain and would not result in adverse impacts to the floodplain values or functions. The proposed project also would not change the flood hazard rating. Temporary disturbance within the floodplain would cease following completion of construction activities. The proposed project would implement best management practices to mitigate impacts during construction. This proposed project would not significantly modify flow paths within the floodplain from pre-project conditions to post-project conditions. No effects are anticipated to lives or property associated with floodplain modifications.

In accordance with 10 CFR 1022 (CFR 2003), DOE/NNSA will publish this floodplain assessment and initiate a 15-calendar-day public comment period. DOE/NNSA will take into account all substantive comments received on this floodplain assessment and, before implementing the proposed action, provide the Statement of Findings on the proposed floodplain action.

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10 CFR, Energy

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48 CFR, Federal Acquisition Regulations System

49 CFR, Transportation

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DOE Order 435.1, Radioactive Waste Management

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DOE Order 414.1D, Quality Assurance

DOE Oder 458.1, Radiation Protection of the Public and the Environment

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